

Alginate cryogel based glucose biosensor

<b>Publons ID</b>	17899358
<b>Wos ID</b>	WOS:000372053500010
<b>Doi</b>	10.1088/1757-899X/107/1/012010
<b>Title</b>	Alginate cryogel based glucose biosensor
<b>First Author</b>	
<b>Last Author</b>	
<b>Authors</b>	Fatoni, A; Dwiasi, DW; Hermawan, D;
<b>Publish Date</b>	2016
<b>Journal Name</b>	10TH JOINT CONFERENCE ON CHEMISTRY
<b>Citation</b>	12
<b>Abstract</b>	Cryogel is macroporous structure provides a large surface area for biomolecule immobilization. In this work, an alginate cryogel based biosensor was developed to detect glucose. The cryogel was prepared using alginate cross-linked by calcium chloride under subzero temperature. This porous structure was growth in a 100 $\mu$ L micropipette tip with a glucose oxidase enzyme entrapped inside the cryogel. The glucose detection was based on the colour change of redox indicator, potassium permanganate, by the hydrogen peroxide resulted from the conversion of glucose. The result showed a porous structure of alginate cryogel with pores diameter of 20-50 $\mu$ m. The developed glucose biosensor was showed a linear response in the glucose detection from 1.0 to 5.0 mM with a regression of $y = 0.01x+0.02$ and R-2 of 0.994. Furthermore, the glucose biosensor was showed a high operational stability up to 10 times of uninterrupted glucose detections.
<b>Publish Type</b>	Book in series
<b>Publish Year</b>	2016
<b>Page Begin</b>	(not set)
<b>Page End</b>	(not set)
<b>Issn</b>	1757-8981
<b>Eissn</b>	
<b>Url</b>	<a href="https://www.webofscience.com/wos/woscc/full-record/WOS:000372053500010">https://www.webofscience.com/wos/woscc/full-record/WOS:000372053500010</a>
<b>Author</b>	DADAN HERMAWAN